

GenCore version 4.5  
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OM nucleic - nucleic search, using sw model

Run on: May 11, 2002, 15:35:44 ; Search time 202.07 seconds  
(without alignments)  
16687.385 Million cell updates/sec

Title: US-09-911-513-1  
Perfect score: 1964  
Sequence: 1 taataatcatcttttttctt.....tctaaattactcacactggc 1964

Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 1736436 seqs, 858457221 residues

Total number of hits satisfying chosen parameters: 3472872

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : N\_Geneseq\_032802.\*  
1: /SIDSI/gcgdata/hold-geneseq/geneseq-emb1/NA1980.DAT.\*  
2: /SIDSI/gcgdata/hold-geneseq/geneseq-emb1/NA1981.DAT.\*  
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21: /SIDSI/gcgdata/hold-geneseq/geneseq-emb1/NA2000.DAT.\*  
22: /SIDSI/gcgdata/hold-geneseq/geneseq-emb1/NA2001A.DAT.\*  
23: /SIDSI/gcgdata/hold-geneseq/geneseq-emb1/NA2001B.DAT.\*  
24: /SIDSI/gcgdata/hold-geneseq/geneseq-emb1/NA2002.DAT.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	1964	100.0	1964	18	AAT91937 Arabidopsis thalia
2	1907.8	97.1	1951	22	AAD06646 A. thaliana transc
3	1907.8	97.1	1951	22	AAD05791 Arabidopsis thalia
4	1580.4	80.5	1643	18	AAT91938 Arabidopsis thalia
5	1579.4	80.4	1602	21	AAC45745 Arabidopsis thalia
6	1570	79.9	1642	18	AAT91939 Arabidopsis thalia
7	1570	79.9	1642	18	AAT91941 Arabidopsis thalia
8	1556.4	79.2	1636	18	AAT91940 Arabidopsis thalia
9	915.8	46.6	1764	22	AAD06661 A. thaliana transc

10	915.8	46.6	1764	22	AAD05776 Arabidopsis thalia
11	879.4	44.8	1779	22	AAT25480 Nucleotide sequenc
12	877.8	44.7	1779	22	AAT25481 Nucleotide sequenc
13	403	20.5	2255	20	AAK36280 Maize 1al genomic
14	381.8	19.4	1768	20	AAK36278 Wheat Rht clone C1
15	381.8	19.4	2125	20	AAK36279 Wheat Rht clone 5a
16	334	17.0	1746	20	AAK36285 Consensus cDNA seq
17	334	17.0	2709	20	AAK36275 Composite DNA sequ
18	333.4	17.0	372	21	AAK65302 Arabidopsis SCL ES
19	333.4	17.0	457	21	AAK65312 Arabidopsis SCL ES
20	298	15.2	343	21	AAK65301 Arabidopsis SCL ES
21	191	9.7	321	21	AAK65320 Arabidopsis SCL ES
22	184.2	9.4	341	21	AAK56136 Arabidopsis SCL ES
23	184.2	9.4	341	21	AAK56136 Eucalyptus grandis
24	175.8	9.0	342	21	AAK56558 Eucalyptus grandis
25	158.6	8.1	497	21	AAK65319 Arabidopsis SCL ES
26	133.6	6.8	1729	19	AAK57137 Pinus radiata tran
27	116	5.9	1085	18	AAK63099 Tomato LS CDNA. L
28	116	5.9	1085	18	AAK63099 Arabidopsis SCAREC
29	111.4	5.7	377	20	AAK65281 Arabidopsis SCLa4
30	106.8	5.4	332	20	AAK36255 DNA sequence obtai
31	104	5.3	1094	18	AAK95770 Maize 2m-SCL2 frag
32	104	5.3	1094	21	AAK65285 Maize SCLml partia
33	96	4.9	377	20	AAK36256 DNA sequence obtai
34	95.6	4.9	369	20	AAK36258 Arabidopsis thalia
35	92.4	4.7	1675	21	AAK51976 Arabidopsis thalia
36	89.2	4.5	1368	18	AAK95756 Arabidopsis SCAREC
37	89.2	4.5	2151	21	AAK39124 Arabidopsis thalia
38	88	4.5	1427	21	AAK42395 Arabidopsis thalia
39	82.8	4.2	2163	18	AAK95753 Arabidopsis SCAREC
40	82	4.2	1369	21	AAK49468 Arabidopsis thalia
41	81.2	4.1	490	21	AAK65321 Arabidopsis SCL ES
42	74.8	3.8	295	21	AAK65309 Arabidopsis SCL ES
43	73.4	3.7	1464	21	AAK47238 Arabidopsis thalia
44	72.8	3.7	1279	18	AAK95757 Arabidopsis SCAREC
45	72.8	3.7	1279	21	AAK65288 Arabidopsis SCLa5

ALIGNMENTS

RESULT 1  
AAT91937  
ID AAT91937 standard; DNA; 1964 BP.  
XX AC AAT91937;  
XX AC AAT91937;  
XX DT 19-MAR-1998 (first entry)  
XX DE Arabidopsis thaliana gibberellin insensitivity gene gai.  
XX DE Gibberellin insensitivity; gai; plant growth inhibition;  
KW dwarf phenotype; lodging resistance; increased yield;  
KW flowering regulation; bolting inhibition; spinach; lettuce;  
KW antibody; identification; probe; primer; antisense; sense;  
KW expression regulation; co-suppression; rice;  
KW Bakane disease resistance; ss.  
XX OS Arabidopsis thaliana.  
XX PN W09729123-A2.  
XX PD 14-AUG-1997.  
XX PF 12-FEB-1997; 97WO-GB00390.  
XX PR 12-FEB-1996; 96GB-0002796.  
XX PA (INNE-) INNES CENT INNOVATIONS LTD JOHN.  
XX PI Carol P, Harberd NP, Peng J, Richards DE;  
XX WPI; 1997-415295/38.  
DR

DR P-PSDB; AAW30792.

XX Nucleic acid encoding gibberellin inhibitor GAI and related  
PT antisense sequences - used to create tall, or particularly, dwarf  
PT plants, especially crops such as maize, rice and wheat

PS Claim 2; Fig 3; 76pp; English.

The present sequence encodes the *Arabidopsis thaliana* gibberellin insensitivity (gai) gene product (GAI), the expression of which inhibits plant growth. However the inhibition is antagonised by gibberellin (GA), while gai expression confers a dwarf phenotype that is insensitive to GA. Manipulating gai and GAI expression can produce tall or dwarf plants, particularly the latter for increased resistance to lodging and increased yield. It may also allow regulation of flowering, i.e. plants remain in the vegetative state until treated with GA, useful to inhibit bolting in spinach and lettuce. GAI can be used to raise specific antibodies for identifying homologous proteins or genes in other species. gai fragments can also be used as probes or primers to identify and clone related sequences, or in the preparation of antisense or sense expression regulating (co-suppressing) sequences. Rice plants that express GAI may be resistant to Bakane disease. Manipulation of gai and GAI makes it possible to tailor the degree of dwarfism and GA sensitivity to particular crops or situations.

Sequence 1964 BP; 489 A; 426 C; 474 G; 575 T; 0 other;

Query Match	Score 1964;	DB 18;	Length 1964;
	100.08;		

Best Local Similarity  
100.0%; Pred. No. 0;

Matches 1964; Conservative	0; Mismatches	0; Indels	0; Gaps	0; Gaps
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Qy 1 taataatcatttttttcttataaaccttcctctctctatttttacaattttatttttqtatta 60

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QY 121 agattcttcaccttcccacaataaagcaaaacctagatccgacatcgaaaggaaaaaccttt 180

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Qy 181 tagatccatcttgaaaaaaacccaatgaagagagatcatcatcatcatcaaga 240

Db 181 tagatccatctctgaaaaaaacccaaccatgaagagagatcatcatcatcatcaaga 240

Ov 241 taagaagactatgatgatgaatgaagaagacgacggtaaacggcatggaaccttctagc 300

241 200

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Qy 361 gcttgaagttatgatgtctaatgttcaagaagacgatactttctcaactcgcctactgagac 420

Db 361 gcttgaggttatgatgtcctaattcaagaagacgatctttctcaactcgctactgagac 420

Qy 421 tgttcactataatccggcgaggctttacacgtggcttgattctatgctcaccgaccttaa 480

Db 421 tqtccactataatccggcggagcctttacacacgttgaccttgattctatgctcaccgaccttaa 480

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Qy	1801	caattagatgtggcctcaatgaatgatctgttgaacgggttatgatagatttcoga	1860
Db	1801	caattagatgtggcctcaatgaatgatctgttgaacgggttatgatagatttcoga	1860
Qy	1861	ccgaagccaaactaaatcctactgttttccctttgtcacttgttaagatcttatctttc	1920
Db	1861	ccgaagccaaactaaatcctactgttttccctttgtcacttgttaagatcttatctttc	1920
Qy	1921	attatattagtgtaattgaaataatttataaattactcacactggc	1964
Db	1921	attatattagtgtaattgaaataatttataaattactcacactggc	1964
RESULT 2			
AAD06646			
ID	AAD06646 standard; cDNA; 1951 BP.		
XX	AAD06646;		
XX	XX		
DT	10-AUG-2001 (first entry)		
XX	XX		
DE	A. thaliana transcription factor G308 cDNA.		
XX	XX		
KW	Plant transcription factor; phenotype; sugar sensing characteristic;		
KW	transgenic plant; plant yield; growth; germination; photosynthesis;		
KW	glyoxylate metabolism; respiration; pathogen response; wounding response;		
KW	cell cycle regulation; pigmentation; flowering; senescence; physiology;		
KW	storage organ; metabolism; ss.		
XX	XX		
OS	Arabidopsis thaliana.		
XX	XX		
FH	Key Location/Qualifiers		
FT	196..1794		
CDS	/*tag= a		
FT	/*tag= a		
FT	/product= "Transcription factor"		
XX	XX		
PN	WO200135725-A1.		
XX	XX		
PD	25-MAY-2001.		
XX	XX		
PF	14-NOV-2000; 2000WO-US31414.		
XX	XX		
PR	17-NOV-1999; 99US-0166228.		
PR	17-APR-2000; 2000US-0197899.		
PR	22-AUG-2000; 2000US-0227439.		
XX	XX		
PA	(MEND-) MENDEL BIOTECHNOLOGY INC.		
PA	(JIANG/) JIANG G.		
PA	(HEAR/) HEARD J.		
PA	(PINE/) PINEDA O.		
PA	(PILG/) PILGRIM M.		
PA	(ADAM/) ADAM L.		
PA	(RIEC/) RIECHMANN J L.		
PA	(YUGG/) YU G.		
PA	(SAMA/) SAMAHA R.		
XX	XX		
PI	Jiang C, Heard J, Pineda O, Pilgrim M, Adam L, Riechmann JL;		
PI	Yu G, Samaha R;		
XX	XX		
DR	WPI: 2001-335977/35.		
DR	P-PSDB; AA02545.		
XX	XX		
PT	Nucleic acids encoding plant transcription factor polypeptides, useful		
PT	for altering the sugar sensing characteristics of plants and increasing		
PT	yield, e.g. corn, potato and cotton plants -		
XX	XX		

Db 614 acggcgctgtagaaccaccacagcagcagcggtgagtcgaactcggcgcatgttctcgtggtg 673  
Qy 687 actcgcaggagaacggtgtggtctcgttcacgcgcttcttgcttgcgctgaagctgttc 746  
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Qy 747 agaaggagaactgactgtgctggaagctcgttggaagcaaatcggatcttagctgttt 806  
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Qy 1947 taaattactcacact 1961  
Db 1934 aatctcgcgctaatt 1948

## RESULT 3

AAD05791

ID AAD05791 standard; cDNA; 1951 BP.

XX AAD05791;

XX 31-JUL-2001 (first entry)

XX Arabidopsis thaliana transcription factor, G308 cDNA.

XX Transcription factor; biochemical characteristic; controlling element;  
XX structural characteristic; developmental characteristic; gene therapy;  
XX agricultural biotechnology; plant trait modification; ss.

XX Arabidopsis thaliana.

FH Key Location/Qualifiers

FT CDS 196..1794

FT /\*tag= a

FT /product= "Transcription factor, G308"

XX WO200136597-Al.

XX 25-MAY-2001.

XX 14-NOV-2000; 2000WO-US31344.

XX 17-NOV-1999; 99US-0166228.

XX 17-APR-2000; 2000US-0197899.

XX 22-AUG-2000; 2000US-0227439.

XX (MEND-) MENDEL BIOTECHNOLOGY INC.

PA (CREE/) CREELMAN R.

PA (YUGG/) YU G.

PA (ADAM/) ADAM L.

PA (RIEC/) RIECHMANN J L.

PA (HEAR/) HEARD J.

PA (SAMA/) SAMAHA R.

PA (PILG/) PILGRIM M.

PA (PINE/) PINEDA O.

PA (JIAN/) JIANG C.

XX Creelman R, Yu G, Adam L, Riechmann JL, Heard J, Samaha R;

XX Pilgrim M, Pineda O, Jiang C;

XX WPI; 2001-335999/35.

XX P-PSDB; AAE01907.

XX Nucleic acids encoding plant transcription factor polypeptides, useful  
XX for altering the biochemical characteristics of plants e.g. corn,  
XX potato and cotton plants -

XX Claim 4; Page 112-113; 127pp; English.

XX The present sequence is Arabidopsis thaliana transcription factor, G308





Db	970	gcgcttcgaacctggtggtcctcctctgttttcccggttaaccgggaattggtccacgggcacgcg	1029	PR	25-MAR-1999;	99US-0126264.
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ID	AAC45745 standard; DNA; 1602 BP.					99US-0135353.
XX	AAC45745;					99US-0135629.
AC	AAC45745;					99US-0136021.
DT	18-OCT-2000 (first entry)					99US-0136392.
XX	Arabidopsis thaliana DNA fragment SEQ ID NO: 47609.					99US-0136782.
DE	Hybridisation assay; genetic mapping; gene expression control;					99US-0137222.
XX	protein identification; signal transduction pathway;					99US-0137502.
KW	metabolic pathway; promoter; termination sequence; ss.					99US-0137724.
XX	Arabidopsis thaliana.					99US-0138094.
XX	EP1033405-A2.					99US-0138540.
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PR	09-MAR-1999; 99US-0123548.					99US-0139456.
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Qy 1379 aaacccggagattttcactcgtgtgtgagcaggaatcgaaccataatagtcgcgattttctta 1438  
Db 1269 aaacccggagattttcactcgtgtgtgagcaggaatcgaaccataatagtcgcgattttctta 1328  
Qy 1439 gatcggtttactgagtcggttgcattattactcgcagctgttctgactcgttggaaagggtta 1498  
Db 1329 gatcggtttactgagtcggttgcattattactcgcagctgttctgactcgttggaaagggtta 1388  
Qy 1499 ccgagtggtcaagaacaaaggtcgcgaggtttacttgggttaaacagatcgaacgtt 1558  
Db 1389 ccgagtggtcaagaacaaaggtcgcgaggtttacttgggttaaacagatcgaacgtt 1448  
Qy 1559 gtggcttctgtagggacctgaccgagttgagcgttcataaaccgttgaatcagtgaggaac 1618  
Db 1449 gtggcttctgtagggacctgaccgagttgagcgttcataaaccgttgaatcagtgaggaac 1508  
Qy 1619 cgggttcgggtcgtcgtgttgcggtgcacataattggttcgaatcggtttaagcaagcg 1678  
Db 1509 cgggttcgggtcgtcgtgttgcggtgcacataattggttcgaatcggtttaagcaagcg 1568  
Qy 1679 agtatgcttttggctctgttcaacgcggtgaggggttatcgggtggagagagtgacggc 1738  
Db 1569 agtatgcttttggctctgttcaacgcggtgaggggttatcgggtggagagagtgacggc 1628  
Qy 1739 tgtctcatgttggg 1752  
Db 1629 tgtctcatgttggg 1642

## RESULT 7

AAT91941  
ID AAT91941 standard; DNA; 1642 BP.

XX AAT91941;

XX 19-MAR-1998 (first entry)

DE Arabidopsis thaliana gibberellin insensitivity gene gai-d4.

XX Gibberellin insensitivity; gai-d4; plant growth inhibition;  
dwarf phenotype; lodging resistance; increased yield;

KW flowering regulation; bolting inhibition; spinach; lettuce;

KW antibody; identification; probe; primer; antisense; sense;

KW expression regulation; co-suppression; rice;

KW Bakane disease resistance; ss.

XX Arabidopsis thaliana.

OS Arabidopsis thaliana.

PN WO9729123-A2.

XX 14-AUG-1997.

XX 12-FEB-1997; 97WO-GB00390.

XX 12-FEB-1996; 96GB-0002796.

XX (INNE-) INNES CENT INNOVATIONS LTD JOHN.

XX Carol P, Harberd NP, Peng J, Richards DE;

XX WPI; 1997-415295/38.

XX P-PSDB; AAW30796.

XX Nucleic acid encoding gibberellin inhibitor GAI and related  
antisense sequences - used to create tall, or particularly, dwarf

XX plants, especially crops such as maize, rice and wheat



















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QY	1495	- - - - - t g t a c c a g a t g g t c a a g a c a a c a g g t c a t g t c g a g g	1529
Db	941	t c t a c t c g g g g c t g c t g c t c t c g c g c g c g c a c g a c c a g g t c a t g t c c g a g g	1000
QY	1530	t t a c t t g g g t a a a c a g a t c t a a c g t t g t g g c t t g t a t g g a c c t g a c c g a g t t g a g c	1589
Db	1001	t g t a c t c g c g c g a g a t c t a a c a c g t g g t g g c t c g a g g g g c g a g a g c g c a c a g a g c	1060
QY	1590	g t c a t g a a a c g t t g a g t c a g t g g a g g a a c c g g t t c g g g t c t g t c t g t c t c t t c a a c g g c g g t g	1649
Db	1061	g c c a c g a g a c g c t g g g c a g t g c g g a a c c g g c t g g g c a a c c g c g g t t c g a g a c g t c c	1120
QY	1650	a t a t t g g t c g a a t c g y t t a a g a a g c a g a t a t g c t t t g g t c t c t g t c t c t t c a a c g g c g g t g	1709
Db	1121	a c c t g g g c c c a a t c t a c a a g a g g c a c a g c t g c t g g c g c t c t t c g c g c t c t t c g c g g g g c g	1180
QY	1710	a g g g t a t c g g t g g a g g a g a g t g a c g g c t g c t c a t g t t g g g t g g c a c a c a c a c g a c c g c	1769
Db	1181	a c g g c t a a a g t g a g a g a a g a a g g c t g c c t g a c g t g g g t g g c a c a c g c g c c c g c	1240
QY	1770	t e a t a c c a c c t c g c t t g g a a c t c t c c	1798
Db	1241	t g a t c c a c c t c g g a t g g c g c t g g c c	1269
<b>RESULT 15</b>			
ID	AAX36279	standard; DNA; 2125 BP.	
XX	AC	AAX36279;	
AC	AC		
XX	XX		
DT	16-JUL-1999	(first entry)	
DE	Wheat Rht clone 5a1 genomic sequence.		
XX	Rht gene; homologue; Triticum aestivum; wheat; growth inhibition;		
KW	antagonist; gibberellin; dwarf phenotype; gibberellin biosynthesis;		
KW	paclobutrazol; ss.		
XX	Triticum aestivum.		
OS	WO9909174-Al.		
XX	25-FEB-1999.		
PF	07-AUG-1998; 98WO-GB02383.		
XX	13-AUG-1997; 97GB-0017192.		
PR	(PLAN-) PLANT BIOSCIENCE LTD.		
PA	Harberd NP, Peng J, Richards DE;		
XX	WPI: 1999-181040/15.		
DR	P-PSDB; AAY02540.		
XX	New Triticum aestivum polynucleotides - encode a polypeptide which		
PT	provides inhibition of the growth of plants, which inhibition is		
PT	antagonised by gibberellin, used to confer a dwarf phenotype		
XX	Disclosure; Fig 8a; 88pp; English.		
PS	The specification describes polypeptides encoded by the Rht gene (and		
XX	its homologues) that, when expressed in Triticum aestivum, inhibit		
CC	growth of the plant. This growth inhibition is antagonised by		
CC	gibberellin. The products can be used to provide Rht expression in		
CC	plants, conferring a dwarf phenotype on a plant which is correctable		
CC	by treatment with gibberellin. In addition, the products can be		
CC	used to produce Rht mutant plants which are dwarfed compared with		
CC	wild-type, the dwarfing being gibberellin-insensitive. Taller plants		
CC	may be made by knocking out Rht or the relevant homologous gene in		
CC	the plant of interest. Plants may be made which are resistant to		
CC	compounds which inhibit gibberellin biosynthesis, such as paclobutrazo		

[illegible]



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